REMARKS

Claims 1-94 are pending in action, with claims 1, 14, 26, 37, 48, 61, 73, and 84 being independent. Claims 1, 14, 25, 26, 37, 48, 61, 72, 73, and 84 are being amended. No new matter has been added. Support can be found in the specification, for example, in paragraph [0073] on page 18.

Claims 1-4, 14-17, 26-28, 37-40, 48-51, 61-64, 73-75, and 84-87 stand rejected under 35 U.S.C. 102(e) as allegedly being unpatentable over Kadous et al. (U.S. Patent 6,636,568).

Claims 5-13, 21-24, 29-35, 41-47, 52-60, 65-72, 76-83, and 88-94 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kadous in view of Gesbert, et al. From Theory to Practice: An Overview of MIMO Space-Time Coded Wireless Systems, IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, VOL. 21, NO. 3, APRIL 2003, and in further view of Rietz, College Algebra pages 186-187, Henry Holt and Company, 1909.

Claims 18, 41, 65, and 88 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kadous in view of Gesbert, and in further view of Rietz.

Applicants respectfully traverse the rejections and request reconsideration in view of the amendments above and the following remarks.

Interview Summary

Applicants would like to thank Examiner Baron for his courtesy and professionalism in conducting an interview on April 30, 2008, after issuance of the Office Action dated February 19, 2008. The following is a summary of the interview:

1. No exhibit or demonstration was conducted.

2. The pending §102 and §103 rejections were discussed.

3. The general nature of the cited reference Kadous was discussed in the context of potential claim amendments.

4. No other pertinent matters were discussed.

Drawings

Applicants respectfully request that the Examiner indicate that the drawing sheets for Figs. 1-7D filed on January 28, 2004, are acceptable.

Applicant : Sampath et al.   Attorney's Docket No.: 13361-067001 / MP0396
Serial No. : 10/767,067
Filed   : January 28, 2004
Page   : 16 of 22

Section 101 Rejections

Applicants acknowledge the Examiner's withdrawal of rejections to claims 48-72 under 35 U.S.C. 101.

Section 102 Rejections

Claims 1-4, 14-17, 26-28, 37-40, 48-51, 61-64, 73-75, and 84-87 stand rejected under 35 U.S.C. 102(e) as allegedly being unpatentable over Kadous et al. (U.S. Patent 6,636,568).

Applicants respectfully traverse the rejections and request reconsideration in view of the amendments above and the following remarks.

Claim 1 and its dependent claims

Applicants previously argued that Kadous is not understood to teach or suggest the use of mapping permutations for mapping one or more of a plurality of data symbols to a plurality of data symbols.

In the statement of rejection, the Examiner states that "in a MIMO-OFDM system, the symbols are mapped to a set of antennas and tones in some manner. This, in turn, corresponds to at least one (of many) permutations. The claim cites one of the permutations."

As a clarification, Applicants have amended claim 1 to recite applying the plurality of mapping permutations in an alternating manner for a plurality of data tones. As amended, claim 1 recites features not taught by Kadous. Applicants submit that Kadous does not disclose applying a plurality of mapping permutations, let alone, applying the plurality of mapping permutations in an alternating manner for a plurality of data tones. Rather, Kadous discloses determining "data rates for a number of data streams transmitted via a number of transmission channels in a multi-channel communication system." Abstract of Kadous.

For at least these reasons, Applicants submit that claim 1 is allowable as amended. Claims 2-4 depend from claim 1 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 1.

Claim 14 and its dependent claims

Claim 14, as amended, is directed to a method and includes a plurality of data tones that include one or more of a plurality of data symbols mapped according to a plurality of mapping permutations applied in an alternating manner. For at least the same reasons set forth above with respect to claim 1, claim 14 is allowable over Kadous.

Claims 15-17 depend from claim 14 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 14.

Claim 26 and its dependent claims

Claim 26, as amended, is directed to an apparatus and includes applying the plurality of mapping permutations in an alternating manner for a plurality of data tones. For at least the same reasons set forth above with respect to claim 1, claim 26 is allowable over Kadous.

Claims 27-28 depend from claim 26 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 26.

Claim 37 and its dependent claims

Claim 37, as amended, is directed to an apparatus and includes a plurality of data tones that include one or more of a plurality of data symbols mapped according to a plurality of mapping permutations applied in an alternating manner. For at least the same reasons set forth above with respect to claim 1, claim 37 is allowable over Kadous.

Claims 38-40 depend from claim 37 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 37.

Claim 48 and its dependent claims

Claim 48, as amended, is directed to a computer-medium and includes applying the plurality of mapping permutations in an alternating manner for a plurality of data tones. For at least the same reasons set forth above with respect to claim 1, claim 48 is allowable over Kadous.

Claims 49-51 depend from claim 48 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 48.

Claim 61 and its dependent claims

Claim 61, as amended, is directed to a computer-medium and includes a plurality of data tones that include one or more of a plurality of data symbols mapped according to a plurality of mapping permutations applied in an alternating manner. For at least the same reasons set forth above with respect to claim 1, claim 61 is allowable over Kadous.

Claims 62-64 depend from claim 61 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 61.

Claim 73 and its dependent claims

Claim 73, as amended, is directed to an apparatus and includes applying the plurality of mapping permutations in an alternating manner for a plurality of data tones. For at least the same reasons set forth above with respect to claim 1, claim 73 is allowable over Kadous.

Claims 74-75 depend from claim 73 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 73.

Claim 84 and its dependent claims

Claim 84, as amended, is directed to an apparatus and includes a plurality of data tones that include one or more of a plurality of data symbols mapped according to a plurality of mapping permutations applied in an alternating manner. For at least the same reasons set forth above with respect to claim 1, claim 84 is allowable over Kadous.

Claims 85-87 depend from claim 84 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 84.

Section 103 Rejections

Claims 5-13, 21-24, 29-35, 41-47, 52-60, 65-72, 76-83, and 88-94 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kadous in view of Gesbert, et al. From Theory to Practice: An Overview of MIMO Space-Time Coded Wireless Systems, IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, VOL. 21, NO. 3, APRIL 2003, and in further view of Rietz, College Algebra pages 186-187, Henry Holt and Company, 1909.

Applicant : Sampath et al.   Attorney's Docket No.: 13361-067001 / MP0396
Serial No. : 10/767,067
Filed   : January 28, 2004
Page   : 19 of 22

Claims 18, 41, 65, and 88 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kadous in view of Gesbert, and in further view of Rietz.

Applicants respectfully traverse the rejections and request reconsideration in view of the amendments above and the following remarks.

Claims 5-13

Claims 5-13 depend from claim 1 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 1.

Claim 8 is separately allowable for at least the following additional reasons. Claim 8 recites that the mapping permutations are applied to the plurality of data tones in a cyclical manner. In the statement of rejection, the Examiner asserted that Rietz discloses that the nature of the permutation mapping of the permutation of Rietz is cyclical. Applicants respectfully disagree.

Applicants maintain the argument that Rietz only discloses the algebraic definition of combinations of all things different. Combinations do not teach or suggest applying permutations in a cyclical order. Rather, combinations ignore order. Rietz does not disclose applying mapping permutations in a cyclical manner. Therefore, Kadous, Gesbert, and Rietz, alone or in combination do not teach or suggest the method of claim 8.

Claim 18

Claim 18 depends from claim 14 and also is submitted to be allowable for at least the same reasons set forth above with respect to claim 14.

Claims 21-24

Claims 21-24 depend from claim 14 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 14.

Claim 21 is separately allowable for at least the following additional reasons. Claim 21 is directed to a method and includes mapping permutations that are applied to the plurality of data tones in a cyclical manner. For at least the same reasons set forth above with respect to claim 8, claim 21 is allowable over Kadous, Gesbert, and Rietz, alone or in combination.

Claims 29-35

Claims 29-35 depend from claim 26 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 26.

Claim 31 is separately allowable for at least the following additional reasons. Claim 31 is directed to an apparatus and includes a coding module that is operative to apply the mapping permutations the plurality of data tones in a cyclical manner. For at least the same reasons set forth above with respect to claim 8, claim 31 is allowable over Kadous, Gesbert, and Rietz, alone or in combination.

Claims 41-47

Claims 41-47 depend from claim 37 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 37.

Claim 44 is separately allowable for at least the following additional reasons. Claim 44 is directed to an apparatus and includes mapping permutations that are applied to the plurality of data tones in a cyclical manner. For at least the same reasons set forth above with respect to claim 8, claim 44 is allowable over Kadous, Gesbert, and Rietz, alone or in combination.

Claims 52-60

Claims 52-60 depend from claim 48 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 48.

Claim 55 is separately allowable for at least the following additional reasons. Claim 55 is directed to a computer-readable medium and includes mapping permutations that are applied to the plurality of data tones in a cyclical manner. For at least the same reasons set forth above with respect to claim 8, claim 55 is allowable over Kadous, Gesbert, and Rietz, alone or in combination.

Claims 65-72

Claims 65-72 depend from claim 61 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 61.

Applicant : Sampath et al.
Serial No. : 10/767,067
Filed : January 28, 2004
Page : 21 of 22

Attorney's Docket No.: 13361-067001 / MP0396

Claim 68 is separately allowable for at least the following additional reasons. Claim 68 is directed to a computer-readable medium and includes mapping permutations that are applied to the plurality of data tones in a cyclical manner. For at least the same reasons set forth above with respect to claim 8, claim 68 is allowable over Kadous, Gesbert, and Rietz, alone or in combination.

Claims 76-83

Claims 76-83 depend from claim 73 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 73.

Claim 78 is separately allowable for at least the following additional reasons. Claim 78 is directed to an apparatus and includes a coding module that is operative to apply the mapping permutations the plurality of data tones in a cyclical manner. For at least the same reasons set forth above with respect to claim 8, claim 78 is allowable over Kadous, Gesbert, and Rietz, alone or in combination.

Claims 88-94

Claims 88-94 depend from claim 84 and also are submitted to be allowable for at least the same reasons set forth above with respect to claim 84.

Claim 91 is separately allowable for at least the following additional reasons. Claim 91 is directed to an apparatus and includes mapping permutations that are applied to the plurality of data tones in a cyclical manner. For at least the same reasons set forth above with respect to claim 8, claim 91 is allowable over Kadous, Gesbert, and Rietz, alone or in combination.

Conclusion

By responding in the foregoing remarks only to particular positions taken by the Examiner, Applicants do not acquiesce with other positions that have not been explicitly addressed. In addition, Applicants' arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

Applicant : Sampath et al.   Attorney's Docket No.: 13361-067001 / MP0396
Serial No. : 10/767,067
Filed   : January 28, 2004
Page   : 22 of 22

Applicants respectfully request that all pending claims be allowed. Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: _5/19/08_ _____

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